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WATER SOLUBLE THERMOSETTING RESIN - BY REACTING CATIONIC,HIGHLY BRANCHED POLYETHER - (POLYAMIDE)-POLYALKYLENE-POLYAMINE WITH EPICHLORO-HYDRIN

NEW

Cationic, water soluble, partly crosslinked, thermosetting, highly branded resin is prepd. by reacting (I) a cationic, water soluble, highly branched polyether-(polyamide)-polyalkylene-polyamide which consists of a polyether chain molecule with terminal t-amino and quaternary ammonium groups, and (polyamide)-polyalkylene-polyamine side groups; with (II) 0.2-2.0 pref. 0.6-2.0 moles epichlorohydrin per secondary amino group of the (polyamide)-polyalkylene-polyamine.

USE/ADVANTAGES

Used in the paper industry for improving the strength of paper, and the retention of fillers. Also used for purification of waste-water contg. suspended material.

SPECIFICALLY

The reaction is initially effected at 0-50°C and then at 30-80°C.

EXAMPLE

A polyether-polyamide-polyalkylene-polyamine was prepd. by (a) reacting ethylene glycol with epichlorohydrin, (b) treating the pdt. with dimethylamine, (c) reacting diethylenetriamine with adipic acid, and (d) reacting the pdt. from (b) with the pdt. from (c). 111g Epichlorohydrin were added in 30 mins. at 20-25°C to a soln. of 400g of the polyether - polyamide-polyalkylene-polyamine in 166.5g water. The mixt. was stirred at 20-25°C for 60 mins., and heated at 50°C until the viscosity was 400-500 cp. at 25°C. Reaction was terminated by the addition of 668g water and 10g 36.5% hydrochloric acid. The pdt. was obtained in the form of a soln. with an active content of 20%.

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